Industry PROFILE

An industry profile by the Department of Industry, Tourism and Investment and the Department of Transportation, August 2006

Transportation & Warehousing Businesses

The transportation industry includes a broad range of businesses engaged in moving passengers and goods, warehousing and storage, and providing services to these businesses. Transportation can be on road (trucking, transit and ground passenger), rail, water, and air. The post office and courier establishments, which also transport goods, are included in this sector.

THE INDUSTRY TODAY

Transportation and communications are closely linked with the Northwest Territories history and development. Aboriginal people regularly moved great distances in search of game, trade and other resources. When the fur trade was flourishing, regular trade routes, largely along rivers, were maintained from the Arctic to southern Canada. The legacy of this period lives on in the many communities that developed along river trade routes.

In recent decades, the development of the mineral and oil and gas resources has led to an expansion of roads, airports, rail and pipeline networks.

Today, most communities are linked to the highway system for at least part of the year, either by all weather road or ice road. Scheduled carriers also fly to most communities in the NWT.

The transportation industry includes some of the NWT's largest companies, including Canadian North, RTL Robinson Enterprises Ltd, First Air and NTCL.

The industry is a major employer. In 2004, industry employment averaged 2,100 people, between nine and ten percent of total NWT employment. *(Source: Industry Employment, series V1810656, NWT Bureau of Statistics)*

Source: GNWT

Basic Transportation Facts

Approximately 65% of NWT residents have access to land based transportation modes for only 10 or 11 months of the year, this is due to ferry service and ice road disruptions caused by freeze-up and spring thaw;

Only 19% of NWT residents have year-round highway access;

13% only have land access via winter road a few weeks or months each winter;

3% of NWT residents rely on marine or air access only; and,

81% of NWT residents rely on air transportation as the only source of access and resupply for a month or more each year.

Basic Transportation Map - Source: Department of Transportation and Industry, Tourism and Investment

NWT Transportation and Communication Networks

The NWT has 6 major transportation systems:

- Mackenzie Rail and Marine grids are centered in Hay River but include communities throughout the Mackenzie River system, and provides a major link to southern Canada.
- A network of all-weather highways linked to Alberta, British Columbia and the Yukon.
- An extensive system of seasonal ice roads, supplying remote communities and mining sites.
- An extended system of airports, including a number with jet service.
- A major oil pipeline from Norman Wells to Alberta plus a series of smaller gas pipelines connecting southern NWT gas wells to Alberta and BC grids. There is also a small pipeline in Inuvik supplying local gas.
- An extended system of telecommunications including Internet providers. Northwestel dominates telephone networks while firms such as Ardicom, SSI Micro, and NewNorth Networks are major players in networking and Internet connections. NetKaster, a new service offered through Northwestel Cable, brings high speed Internet to rural and remote communities in the NWT.

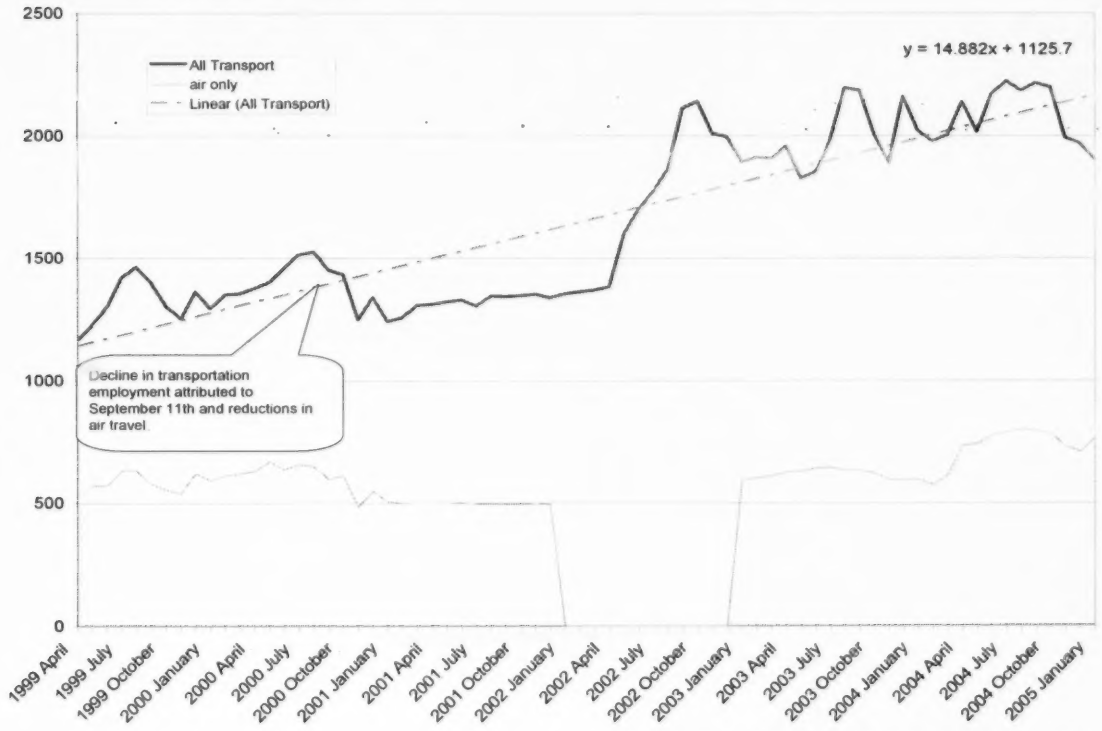
INDUSTRY EMPLOYMENT

The transportation industry accounts for about 1 in every 10 NWT jobs. Chart 1 plots industry employment since 1999. The trend shows that, on average, the industry creates about 15 new jobs a month.

Overall, industry employment is cyclical with peaks during late summer and mid-winter. The major exception was during the winter of 2000, when there was a significant decline in industry employment. This decline originated with a sharp increase in fuel prices, and was prolonged by the September 11, 2001, terror attacks in the United States.

While current industry employment has recovered and made up for the initial losses over 2000/2001, rising fuel prices are having a negative effect on employment. In recent months, current industry employment has fallen below the long-term trend.

Chart 1: Industry Employment Since 1999



Source: NWT Bureau of Statistics, Statistics Quarterly

TRANSPORTATION BUSINESS DEVELOPMENT

Under the new North American Industry Classification System (NAICS), the transportation sector comprises businesses primarily engaged in transporting passengers and goods, warehousing and storage, and providing services to these establishments. The modes of transportation are road (trucking, transit and ground passenger), rail, water, air and pipeline.

One characteristic of transportation businesses is that many are structured as networks, with activities, workers, and physical facilities distributed over an extensive geographic area.

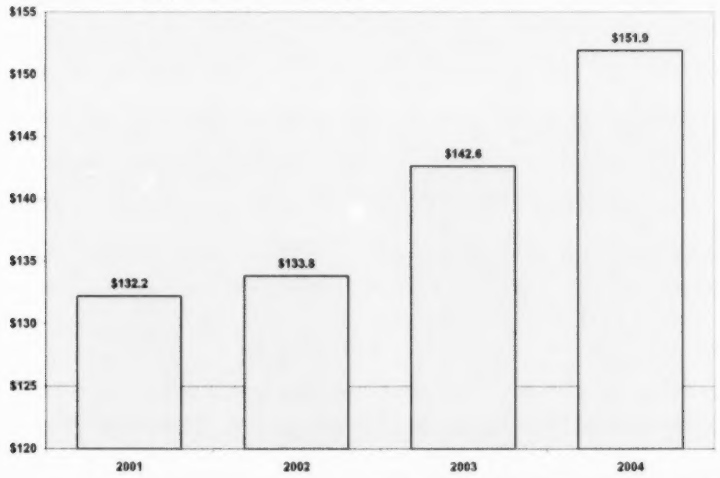
Chart 2 charts the GDP contribution of Transportation and Warehousing to the NWT economy. While the industry contribution has increased to approximately $152 million since 2001, it has not kept pace with overall GDP growth. In fact, the industry's share of GDP has declined to 4.1% from 4.7% in 2001.

The slower growth of transportation likely reflects a periodic reliance on imported services rather than a fundamental change in the economy. For example, freight movements to the diamond mines involve a large number of trucks over a relatively short operating window. It would not be economic to maintain this capacity over the entire year so trucks are contracted from other regions of Canada.

Gross Domestic Product

GDP, or Gross Domestic Product, is a measure of how big an economy is. A common belief is that GDP is the total value of all goods and services produced in a country in a particular time period. But this is not strictly correct. We have to adjust the total value of output – which is called gross output – to make sure we aren't double counting. For example, suppose a firm makes $100,000 worth of furniture in a year, but in doing this, it buys supplies worth $40,000 from other firms. Of the total sales of $100,000, the component that our furniture firm is responsible for – the firm's value added – is $60,000. This is the number we want to include in GDP – the value added from each firm.

Chart 2: Transportation Industry GDP Contribution Since 2001



Source: NWT Bureau of Statistics, Statistics Quarterly

Trucking Costs Compared

Transport Canada notes that truck-operating costs in Canada are increasing, largely because fuel costs, which increased significantly in 2004 and 2005 and continue to rise in 2006.

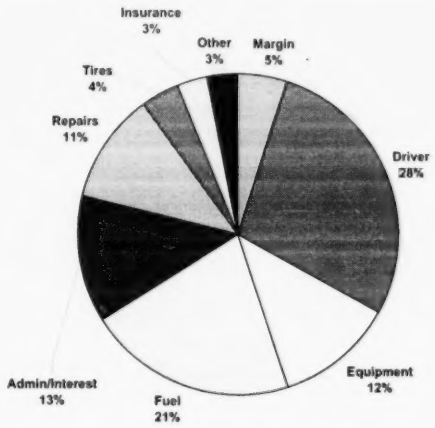
Increased costs in other areas such as driver wages and repairs have been moderate.

Overall costs have been kept in control by the introduction of better trucking technologies, such as extended oil life (sampling) technologies. Improvements in various mechanical components have also reduced maintenance and repair costs. (Source: Transport Canada)

Transport Canada publishes an annual report on trucking company costs in Canada. The 2003 report published operating costs per kilometer in all Canadian provinces and territories.

Chart 3 highlights total costs over 2003 for specific regions. As shown, NWT costs (cents per kilometer) are higher than most provinces, but lower than British Columbia or the Yukon.

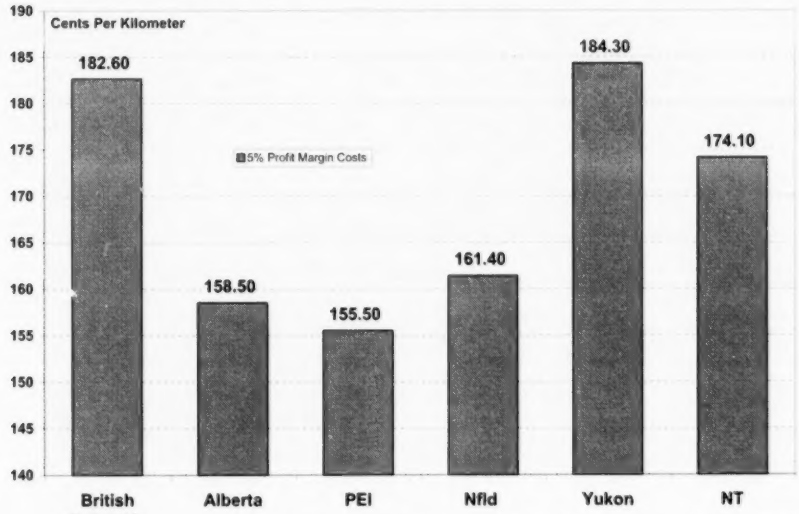
Chart 4: Average Trucking Costs in Canada with 5% Profit Margin; 5-Axle Semi Unit (Van) 80,000 kilometers per year.



Note, in the foregoing, that driver costs (at 28%) plus fuel costs (21%) are the two largest components of cost for the Canadian intra-provincial case studies. Equipment ownership (12%), administration and interest (13%) and tires & repairs (15%) are the next most important cost items.

Chart 3: Trucking Costs Compared - Cents Per Kilometer with 5% Profit Margin

5-Axle Semi Unit (Van) 80,000 kilometers per year.



Source: Operating Costs of Trucks in Canada, Transport Canada, 2003

Driver Costs

Driver costs are influenced by distance, hours and tonnage associated with a haul. Larger highway vehicles are costed on a per-kilometer rate. This is standard procedure for operating on paved roads. However, it is also common for drivers to be paid on an hourly basis for operating on gravel roads, due to the slower vehicle speed and other factors.

As shown in chart five, driver costs per kilometer are higher in the NWT than many provinces, but less than the Yukon and British Columbia.

Higher Winter Driving Costs

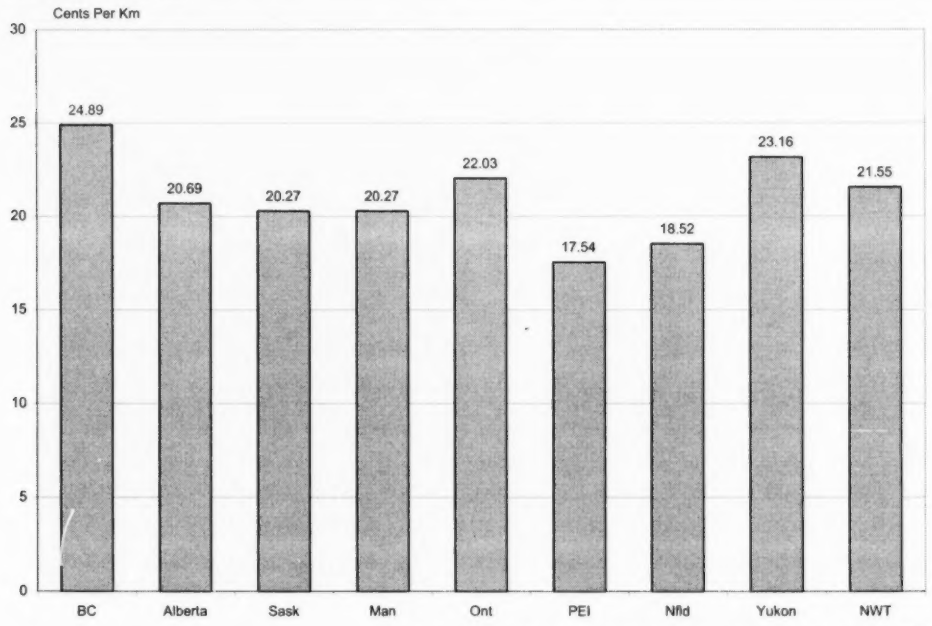
A review by Transport Canada of typical motor carrier operating statistics indicated winter driving:

- Increased fuel consumption by about 20 percent per kilometre reflecting a combination of reduced traction, increased accessory demands, and increased idle/warm up times.
- Added 30 percent in per kilometre tire costs on the power unit - the product of reduced traction and costs for winter tires.
- Added 20 percent increase in the per kilometre repair costs on the power unit (tractor).

Source: GNWT

Chart 5: Driver costs compared - Cents per kilometer with 5% profit margin

5-Axle Semi Unit (Van)



Source: Operating Costs of Trucks in Canada, Transport Canada, 2003

Trucking Costs and Gravel Roads

By Transport Canada

Transport Canada has conducted a survey of trucking companies that operate on gravel roads. They found trucking costs are generally higher for operating on gravel surfaces, although the exact amount can vary significantly with road conditions and driving habits. The survey found significant cost increases in three areas:

Driver Costs - 8% - 12% increase over paved road operations, for long distance hauling only.

Repair Costs - 20% increase over paved road operations - for both tractors and trailers.

Tire Costs - 70% increase over paved road operations - for power units pulling trailers; 65% increase over paved road operations - for trailers

The increase in driver costs results mainly from additional travel time on gravel roads. The survey indicated that most drivers would demand an hourly rate when traveling on gravel. (It was also found that gravel roads have no significant effect on driver wages for short distance hauls.).

Maintenance costs are also higher on gravel roads than for paved surfaces, as service, parts replacement, and oil and lubrication are needed more frequently.

The extra wear on tires from gravel surfaces significantly reduces tire life. The need for rotation, recapping, and replacement is more frequent than for equivalent vehicles operating on paved surfaces. The increase in tire cost varies by size of equipment, by power unit and trailing equipment.

Vehicle Registration and Mileage

Table 1 highlights vehicle registration numbers and mileage for select Canadian provinces. Lower medium truck registration in the NWT likely reflect increased distances between communities and the relatively limited nature of wholesale trade within the NWT. Also, the transportation of goods within the territory is carried out by a higher proportion of bulk loads compared to "less than" loads.

Source: Barbara Beck (ITI); Highway to Fort Simpson

Table 1: Vehicle Registration and Mileage - Heavy Duty Truck Fleet

	Vehicles (Thousands)		Vehicle-kilometres (Millions)		Average Annual Kilometres (Millions)	
	Medium	Heavy	Medium	Heavy	Medium	Heavy
Newfoundland and Labrador	3.3	2.6	50	143	15,152	55,000
Prince Edward Island	1.6	2.5	12	37	7,500	14,800
Saskatchewan	36.5	23.5	295	1011	8,082	43,021
Alberta	81.6	68.1	1,345	3,693	16,483	54,229
British Columbia	57.7	13.8	1117	391	19,359	28,333
Yukon	0.9	1.2	11	110	12,222	91,667
Northwest Territories	0.5	1.3	7	67	14,000	51,538
Nunavut	0.2	0.1	1	1	5,000	10,000
Canada	***322***	***278.6***	***6,164***	***18,568***	***19,143***	***66,648***

Industry in Action - The Tibbitt to Contwoyto Winter Road

"The world's longest heavy haul ice road and a vital link to the south, the Tibbitt to Contwoyto winter road's route — a distance of 568km — travels 87% of the way over frozen lakes." (From Nuna Logistics)

Nuna Logistics has constructed and maintained the 568km Tibbitt to Contwoyto Winter Road (formerly known as the Lupin Winter Road) each season since 1998.

Construction and maintenance of the Tibbitt to Contwoyto Winter Road by Nuna Logistics allows for the critical re-supply of fuel, materials, equipment, and plant components to the operating mines of BHP Billiton, Diavik Diamond Mines Inc., Echo Bay Mines Ltd. and other exploration properties. The road is operated from the end of January to mid-April each year. Up to 8,000 loads and over 220,000 tonnes of material are delivered over the road each season.

Source: Diavik Going down the ice road

Tibbitt to Contwoyto Winter Road Facts:

- First year of operation 1982
- Licensed and operated by Echo Bay Mines Ltd. (Nunavut) from 1979 to 1998
- Licensed and operated by Tibbitt to Contwoyto Winter Road Joint Venture from 1999 to present
- Joint venture is a partnership between BHP Billiton, and Diavik Diamond Mines Inc.
- Road provides service to mines and exploration activities
- Main road users: Echo Bay Mines Ltd., BHP Billiton, Diavik Diamond Mines Inc., DeBeers Canada Mining Inc.
- Road construction - January
- Road operation — February and March
- Annual number of operational days per year 67
- Route — dispatching from Yellowknife, Northwest Territories - from the end of the 69 kilometre-long Ingraham Trail
- Length 568km with 495km (87%) over frozen lakes and 73km (13%) over land
- 64 over land portages
- Three road camps along the route, Dome Lake, Lockhart Lake and Lac de Gras Lake
- Full catering for users of the road at Lockhart Lake and Lac de Gras camp

Air Transportation

Air transportation is critical to most communities in the NWT, and because of this, almost all communities have an airport or are in close proximity to one. Most airline companies offer a mixture of freight and passenger services.

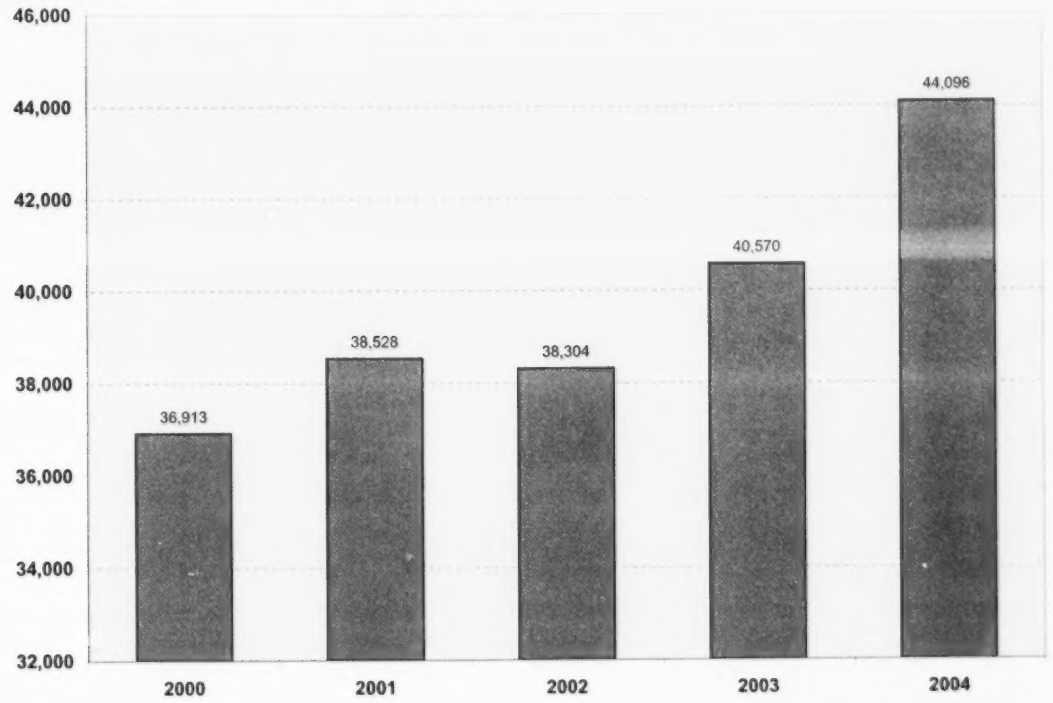
The cost of operating air service in the NWT is relatively high. There are a number of reasons for this, including:

- Serving a relatively small population over a large area;
- High fuel and maintenance costs; and
- A large cargo imbalance, as most planes return south with little freight from the NWT.

The GNWT currently operates 27 airports. There are also private airports at the Ekati and Diavik mines and at some lodges on Great Bear Lake and the East Arm of Great Slave Lake. Yellowknife is considered a "gateway" airport, while Inuvik and Norman Wells are regional hubs.

Itinerant aircraft movements for Yellowknife have been increasing steadily since 2000. Shown in chart 6 below, itinerant movements have increased from 36,913 movements in 2000 to 44,096 movements in 2004. This represents a growth rate of 19.5% for the period.

Chart 6: Total Number of Itinerant Movements Yellowknife, 2000-2004



Source: Transport Canada; Aircraft Movement Statistics 2004 Annual Report

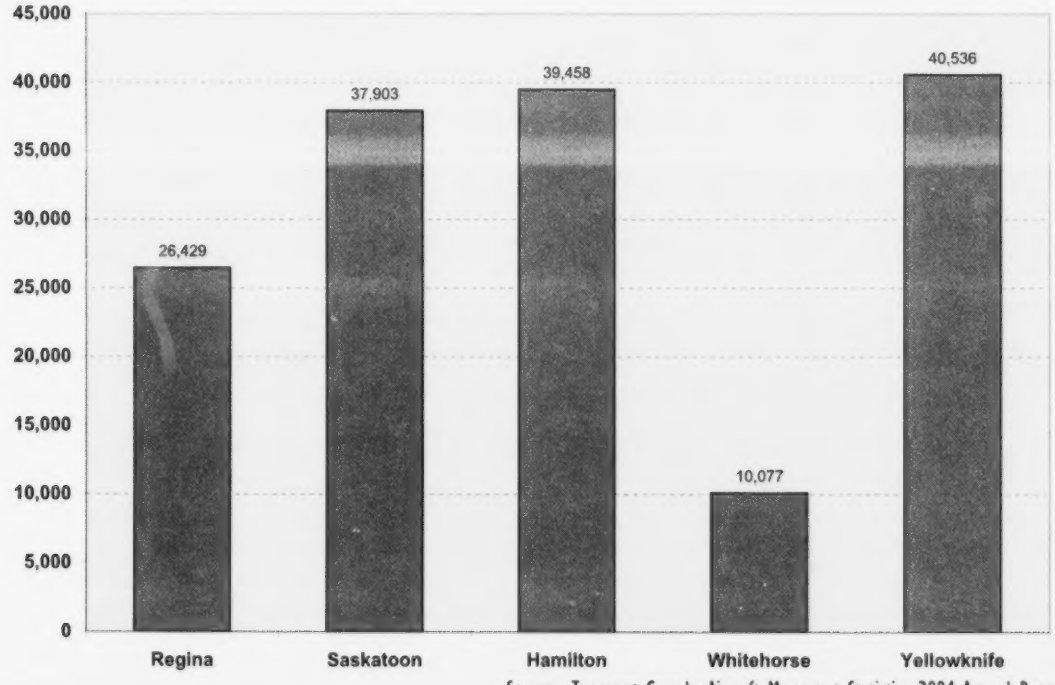
Commercial Aircraft Movements - 2004

Commercial aircraft movements in Yellowknife have been growing at an unprecedented rate. In 2004, there were 40,536 commercial aircraft itinerant movements. This represents a 9% increase over 2003, when there were 37,167 commercial aircraft itinerant movements. When compared to 1999, itinerant movements have increased by a robust 35%.

This large increase in movements can be linked directly to the increased activity in the mining and the oil and gas industries. Companies in these industries must fly workers into camps from both communities within the Northwest Territories as well as from southern Canada to meet their labour requirements.

Source: Diavik - Unloading supplies at Diavik Mine

Chart 4: Total Aircraft Itinerant Movements 2004, Commercial Only



Source: Transport Canada; Aircraft Movement Statistics 2004 Annual Report

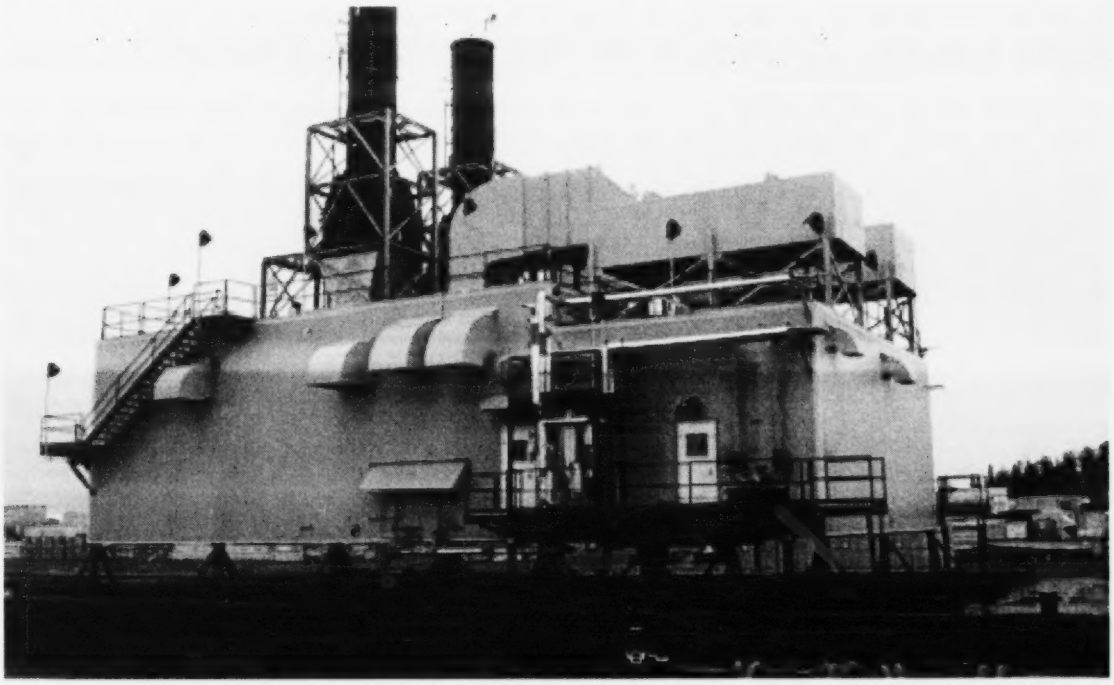
The Marine and Rail Link

CN Rail has recently purchased the Mackenzie Northern Railway (MKNR) from RaiLink. CN plans to upgrade the MKNR to improve customer service and to hopefully maximize the potential of the company to participate in the hauling of oil and gas building supplies and other materials that will be needed with the development of the Mackenzie Valley Gas Pipeline. The MKNR operates from the Edmonton area to the marine gateway at Hay River. Summer barge service is also offered to the Great Slave Lake, Mackenzie River and Western Arctic Coast areas from Hay River.

NTCL is the major operator linking the entire Mackenzie/Western Arctic System to the northern railhead, as well as the highway system, at Hay River. Cooper Barging operates a smaller, trucking oriented service from Fort Simpson primarily to Norman Wells and along the Liard River from Fort Liard. A third operator in the NWT is Gruben Transport Limited of Tuktoyaktuk.

Resource development markets have been an inconsistent market for marine operators.

"However, the marine system is uniquely capable of handling large and/or unusual project logistics requirements. Most recently that was demonstrated with the British Petroleum Badami Oil Field Project east of Prudhoe Bay on the Alaskan North Slope...The Badami production modules were successfully tied in and commissioned during the last week of August - just two months after loading at Hay River." *Source: Northern Territories Transportation Study by Transport Canada (ProLog).*



Source: Transport Canada; Oil field module destined for Alaska via the Mackenzie River Barge and Rail system

Taxi Businesses

The taxi business is a major employer in the NWT, and an important service in many communities. Overall, there are 16 taxi companies in the NWT, with some communities having at least two companies. For example, there are two taxi companies in Yellowknife and two in Fort Smith. Aside from the service and employment benefits, the taxi business provides an important learning school for many entrepreneurs. It is a service in demand, the capital costs are not excessive, the major assets are mobile and most people have experience with vehicle operations.

In many cases, taxi businesses are essential to the development of other community businesses. For example, in many communities tourism development cannot happen without a taxicab or similar service.

Compared to the other regions of Canada, we find that NWT companies pay an average of $5,000 more per year for drivers and close to $3,000 more for fuel. The cost of drivers reflects the higher living costs in the NWT. Companies pay about 15% more, while living costs in Yellowknife are 20% to 30% higher than Edmonton.

Source: Adobe ; Passenger in a Taxi

CHALLENGES FACING TRANSPORTATION BUSINESSES IN THE NWT

Rising Energy and Fuel Prices

Fuel is a key input in the transportation industry. For trucking companies, the cost of the fuel is the second largest variable cost, accounting for about 25% of all costs.

As shown in table two below, prices for fuel in Yellowknife are among the highest for capital cities in Canada; in fact only Whitehorse had a higher price for regular gasoline and only three cities displayed in the table have higher diesel prices. On average, regular gas prices in the NWT are approximately 20% higher than the Canadian average with taxes, and 42% higher without taxes. Overall, NWT fuel taxes are lower than most provinces or territories.

As highlighted by research by Transport Canada (page 5), besides driver costs, fuel makes up the largest share of transport costs. Also, fuel costs are higher in the NWT than in most other jurisdictions.

Table 2: Prices at the Pump, Comparing Yellowknife to other Canadian Cities

Weekly Pump Price Survey / Enquête hebdomadaire des prix au détail

February 21, 2006 / 21 février	**Regular/Ordinaire**			**Diesel (Automobile)**		
DATE (2006)	Price / Prix	(+/-)	Excl. Taxes	Price / Prix	(+/-)	Excl. Taxes
WHITEHORSE	105.7	0.0	82.6	105.2	-0.3	87.1
VANCOUVER *	87.2	-1.9	51.0	93.6	-1.6	62.4
VICTORIA	93.9	-0.1	60.8	91.4	-2.5	63.9
PRINCE GEORGE	94.9	0.0	64.2	91.7	-2.9	66.7
KELOWNA	95.0	-2.0	64.3	93.2	-0.3	68.1
YELLOWKNIFE	104.6	-0.5	77.1	99.9	-6.0	80.3
EDMONTON	78.5	-0.9	54.4	81.9	-1.2	63.5
REGINA *	83.1	-5.3	52.7	87.9	-3.5	63.1
WINNIPEG *	82.7	-0.1	55.8	88.9	0.0	67.6
TORONTO *	87.7	5.7	57.3	87.6	-0.5	63.5
MONTRÉAL *	87.1	-4.5	49.0	97.4	0.5	64.5
FREDERICTON	95.1	-1.1	58.2	104.9	-0.4	70.3
HALIFAX *	89.3	-2.2	52.2	95.6	-1.2	63.7
CHARLOTTETOWN *	92.7	-10.7	55.9	98.4	-1.4	68.0
ST JOHNS *	96.2	-8.7	57.2	105.5	0.0	71.2
Canada average (V)	**86.5**	**0.4**	**54.3**	**90.2**	**-0.9**	**64.0**

V-Volume Weighted

(+/-) indicates price variations from previous week / Les signes (+/-) indiquent les variations de prix par rapport à

Diesel includes both full-serve and self-serve prices / Le service peut être inclus

The Canada average price is based on the relative weights of 10 cities (*) / Le prix moyen cana

Source: MJ Ervin and Associates, http://www.mjervin.com/WPPS_Public.htm

Demand for Services

Sales in transportation businesses are tied to investment and development.

Mineral production grew significantly in 2004 to $2,711 million. Diamond production increased to $2,140 million, while the value of oil & natural gas also increased. Overall gold production dropped by 79% between 2003 and 2004.

Major capital investments expected over the next decade include:

- Around $8 billion towards development of the Mackenzie Valley pipeline and related fields,
- $636 million towards development of the NWT's third diamond mine at Snap Lake, and
- $310 million in highway and related infrastructure development.
- Ongoing development and exploration at the existing diamond mines (likely exceed $200 million).

Tourism also has transportation linkages. Five years ago, the number of visitors from the US and the number from Japan were approximately equal (around 6,000). Since then, American tourism has slightly declined while the number of Japanese has doubled. However, the Japanese market has proven extremely sensitive to events such as 9/11, world conflicts and SARS.

The NWT has not yet tapped the full potential of its outdoor adventure market. The NWT is a premier destination for Aurora viewing and our aboriginal cultures offer an opportunity to attract the growing number of older, educated travelers interested in authentic cultural experiences.

Climate Change

Global warming is already having an impact on the Northwest Territories. Our road transportation system is especially vulnerable to warming since permafrost degradation has severe effects on our roadbeds. As well, contraction in the winter road season could have serious impacts on the cost of living in communities dependent on such roads to bring in bulk supplies of fuel and other goods. If such goods have to be flown in, the cost of living in such communities, which are already high, could increase even further.

Temperatures during the winter of 2005/06 were the mildest in recent history, and both the Tlicho Winter Roads and the Tibbbit Contwoyto Winter Road had very difficult construction seasons. Lakes did not have the required ice thicknesses, and the warm weather made flooding less effective. The operators of the Tibbbit Contwoyto Winter Road were unable to bring the road to full load bearing capacity which limited load sizes and resulted in an airlift to complete the re-supply of mines.

The Labour Supply Challenge

The Canadian Federation of Independent Businesses (CFIB) does an annual survey of NWT members. The CFIB asked businesses to rank factors that impact their operations. The major factor identified was the availability of workers in the North. An earlier study by RWED (predecessor to ITI and ENR) found that over 70% of NWT businesses had difficulty finding people with the necessary skills. Businesses either have to spend extra time and money on training, or they will hire staff or contractors from some other region.

Although many businesses in the NWT felt social assistance limited worker interest, it was not as significant a problem as in southern Canada. NWT businesses felt that high wage expectations were a greater problem. Another major difference between Canada and the NWT is literacy and numeric skills. In fact, literacy was rated as big an issue in the NWT as social assistance payments.

TRANSPORTATION PARTNERSHIPS

Canada Strategic Infrastructure Fund (CSIF)

Over a period of six fiscal years which began in 2003/04 and running until 2008/09, the Federal Government and GNWT have or will under the auspices of the Canada Strategic Infrastructure Fund directed a total of $130 million to highway improvements to mitigate resource development pressures. This funding has helped the Department of Transportation (DOT) to widen, straighten and improve driving surfaces on various highways for better highway safety and to lower operating costs for industry and the motoring public.

Corridors for Canada, submitted in May 2002 to Infrastructure Canada, was the GNWT's proposal under CSIF. The proposal identified six infrastructure improvement projects in two corridors: the Mackenzie Valley Corridor and the Slave Geologic Province. Improvements have been directed to specific sections of highways 1, 4, 7, and 8. Further work is being done on the Mackenzie Valley Winter Road Bridges, grade improvements, and design work for the new Bear River Bridge. These improvements will extend the operating season for the winter road and related opportunities for cheaper surface transportation re-supply.

Airport Capital Assistance Program

The Airports Capital Assistance Program (ACAP), established in 1995 and administered by Transport Canada (TC), was designed to assist eligible airports in financing capital projects related to safety, asset protection and operating cost reductions. It covers all project costs, including pre-engineering and geotechnical investigations, engineering, design, project management and contract administration. ACAP funding also covers the new Aircraft Emergency Intervention Services regulations.

Currently, 18 NWT airports qualify for ACAP funding assistance. Eligibility criteria require that: the airport is not federally owned; is certified; has scheduled flights and handles a minimum of 1,000 passengers annually; and is not able to self-finance the project. Since 1999, the DOT has been successful with seven ACAP applications totaling $16,672,134. Recently, ACAP is providing almost $7 million towards the rehabilitation of airside pavements in Norman Wells. The main impetus for the DOT application was the anticipated increase use of this airport due to the Mackenzie Gas Project.

Source: Department of Transportation; Yellowknife Airport

FUTURE PARTNERSHIPS

Indian and Northern Affairs Canada

In 2003, an agreement was signed with the Department of Indian Affairs and Northern Development (DIAND) for a two-year program to construct 12 bridge structures between Norman Wells and Fort Good Hope. The total cost of this project is $5.7 million, including $3.6 million from DIAND through the Regional Partnerships Fund, $1.9 million from the GNWT, and $0.2 million from industry.

Industry

The GNWT has worked with local contractors/ industry to develop a new contracting and funding approach to operating the Mackenzie Valley Winter Road for the 2005/06 season. This approach should improve the safety and standard of the winter road. A similar approach was used to construct portions of the Tlicho winter road system.

Intelligent Transportation Systems

In partnership with Transport Canada, the GNWT has been investing in Intelligent Transportation Systems (ITS) to improve the efficiency and safety of the transportation system. Approximately $350,000 in federal dollars, to be matched by the GNWT, are available to the GNWT under the ITS Fund, which expires in March of 2006.

Projects being funded include updating the DOT's website to better advise travelers of important information such as road conditions, expected delays, and road closure information, the preparation of a critical incident management plan and flight information and baggage display systems.

Proposed Funding Partnerships

- Corridors for Canada II;
  - Responding to pressures from resource development ($117 million)
  - Economic Diversification and Connecting Communities ($45 million)
- Connecting Canada: Coast to Coast to Coast; A proposal for a partnership between the federal government and the GNWT to complete the construction of the Mackenzie Valley Highway from Wrigley to Tuktoyaktuk on the arctic coast.
- National Transportation Strategy (NTS)
  - To provide sustainable transportation infrastructure funding through uncommitted federal gas tax revenue.

Source: Department of Transporation; Saline Bridge